

Understanding e-Learning

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Abstract: In this study, e-Learning has been argued to be one of the new tools in the education system. Basically, e-Learning is a technology-based learning. Though, technology itself has been in the education system for >30 years, e-Learning can be considered at its infancy stage especially in young educational institutions in Malaysia. This study attempts to discuss how educational theories can be brought into practices in the Malaysian educational settings. The objectives of the study are firstly to identify the relevant theories in preparing courseware for e-Learning and secondly to discuss the transfer of the theories into the practices of e-Learning. Text analysis, observations and a survey were used to collect data. Students in one tertiary learning environment were the subjects of the study. Findings show that there are two issues raised. It is hoped that the study will enhance educators' understanding on the issues of e-Learning and Malaysian education system. After all, the graduates of this new learning tool will be the future leaders of Malaysia.

Key words: e-Learning, tertiary education, learning theories, Malaysian higher learning institutions, educators, Malaysia

INTRODUCTION

With the blooming awareness of developing countries on the need for technology, coupled with the aims of most governments to be amongst the leading countries in Information Technology (IT), no doubt concepts such as smart schools and e-Learning have been the much-talk-about issues for the last decades. Basically, the use of technology in learning environments will prepare the future generations with the new working atmosphere and culture of global network and economies. In Malaysia for instance, the smart school concept is applied at the primary and secondary schools and e-Learning is used extensively at the tertiary level. Both concepts rely heavily on technology to enable teaching and learning.

Scope of the study: In this research, e-Learning in this study focuses on tertiary education. This is because most scholars agree that the principal area of e-Learning is mainly for adult education (Lee, 2001). In Malaysia e-Learning for tertiary education is prospering greatly. Many reasons contribute to this development. One of them is the fact that more private companies and corporate sectors are willing to invest in higher learning education. Many private colleges are offering courses online or offering e-Learning as an alternative to students who cannot meet the schedule like traditional students.

Objectives: The objectives of the study are firstly to identify the relevant theories in preparing courseware for e-Learning and secondly to discuss the transfer of the theories into the practices of e-Learning.

MATERIALS AND METHODS

The methodology of this study is 2-fold. Firstly, text analysis is done in order to gather ample literature review. The most important method is the survey and observations conducted during the research period of July, 2009 to May, 2010. A 120 students from a tertiary institution in Malaysia were the subjects of this study. The researcher was on the capacity of an observer at the institution during the research period. The students were in their 2nd year and they used blended e-Learning in five out of eight courses that they took within the period of the research.

It is pivotal to mention that these students participated in asynchronous as well as synchronous e-Learning. At the same time, they also attended Face-to-Face (FTF) tutorials on campus. The students which comprise 78 female students and 42 male students were not informed that they would be the subjects of a short research. This is to ensure that they enjoyed their learning and participated honestly. After two semesters of monitoring the subjects, they were given a set of questionnaires adapted from studies on e-Learning and its

readiness (Abas *et al.*, 2004). The questionnaires have three sections. The 1st section is the students' profile and the 2nd section comprises questions about e-Learning in general. The last section gauges students responses towards their e-Learning module. Out of 120 questionnaires distributed, only 117 were used for the data analysis. Social Sciences for Statistical Package (SPSS) Version 16 was used to tabulate data.

e-Learning: An overview

e-Learning: Global overview: Researchers on e-learning are aplenty, especially on the positive aspects it projects. However, there is a great dichotomy of opinion as to the value of Information Communication Technology (ICT) in the process of teaching and learning. Most researchers discuss the positive effects of using e-Learning because it improves students' commitment in the learning process. By this, it means that students become active participants in the classrooms.

Lee (2001) also agreed on this because she added that students are becoming more responsible and spend extra time learning through e-Learning. Other scholars like Schoenfeld-Tacher *et al.* (2001) concluded that e-Learning enhances students' competitive spirits and nature in terms of oral interactions. Since, students are getting a lot of resources, students find the information helpful in giving them the contents to converse. In a research on students' understanding of lessons delivered through e-Learning, Morris and Maynard (2000) found that students grasp the concept taught better through e-Learning. As e-Learning promotes individuality, students who are weak can then spend extra time to self-direct and self-pace their learning.

According to Manocheri and Young (2003), students' learning style is essential in ensuring successful academic performance and satisfaction using e-Learning. In their research, it is found that students do better in e-Learning if they adopt the appropriate learning style-assimilator and converger. Assimilator and Converger are terms introduced and used in Kolb Learning Style Inventory (LSI) (Kolb,1984). The inventory defines four levels of learning styles namely Assimilator, Converger, Accomodator and Diverger. Assimilator and Converger both suggest autonomy in the search of knowledge as they assimilate and converge information (Kolb *et al.*, 1974). As such students who do not apply these two learning styles in e-Learning may not perform adequately in their studies. On a more specific basis, Hammond put forth that students interacting online would most likely improve their professional development. This is because the Internet gives a sense of freedom and exposure in such a way that they feel equipped with the right skills and knowledge.

On the other hand, Schutte (1996) pointed out a very interesting finding by Tom Russell. Russell in his study

has compiled a large body of research (248 research reports, summaries and studies) that demonstrates that there is no significant difference in students' learning regardless of the media used for teaching. Bonk and Wisner (2000) argued that the technologies alone will not change the educational process.

Innovative, comprehensive curricula of e-Learning for meaningful and authentic learning experiences will increase the chances of students becoming more successful. It seems that technology is not proven to be more effective than the traditional media. Thus where does e-Learning lead the country and the educational system.

The concept and practice of e-Learning : Before further discussion and analysis are presented, perhaps it is crucial to look at the concept of e-Learning itself. e-Learning refers to learning that uses telecommunication facilities such as teleconferencing, e-mails and the Internet to gather information. The educators will come in the form of physical and virtual lecturers and tutors.

As Lee (2001) summarised acutely that e-Learning expands access to learning, enriching the resources and expertise available to all learners and expanding services to those access to resources is restricted. e-Learning infers informal and formal learning because students can use the given materials or whatever is available on the internet. Some scholars refer to e-Learning as a technology-based learning. In addition according to Rosenberg (2001), e-Learning refers to the use of internet technologies to deliver broad array of solutions that enhance knowledge and performance.

In Malaysia, e-Learning has a slow leap despite the advent of the internet in early 80's. e-Learning was not a popular choice due to a lot of problems. Alhabshi (2002) highlighted two problems. Firstly, issues such as the lack of internet penetration and its instability hindered the enthusiasm for online learning. Providers of e-Learning could not afford to venture into the business because of the difficulty in obtaining the critical mass required to make it a profitable investment. The 2nd more important reason for the lack of enthusiasm in e-Learning is the much preferred method of FTF teaching and learning. Although, distance education has already taken root in Malaysia where little or no student-faculty interaction takes place, there is still the strong lack of confidence among students and more so, their parents that e-Learning could be effective. The FTF methodology of teaching and learning is still strongly believed by both society at large and a considerable number of professional educators to be the most effective way of imparting knowledge. Although, today the nation witnesses a mushrooming business of the e-Learning concept due to the demands to achieve Vision 2020, different sets of issues emerge such as content development of

courseware and students' acceptance of e-Learning. The truth is society needs a new compatible educational system in the right module and level to cover the challenges of the 21st century. e-Learning is the concept whereby the educational processes are brought to the home or anywhere that the students choose to be. This introduction of e-Learning is of the utmost importance since in 2000, for example, the nation is still behind its target of having 40% of youth from the 17-24 of age attending higher learning institutions.

There is only about 17% of youth receiving their education in order to equip them with the correct skills to face future challenges. In 2011, the number of youth at the institutes of higher learning is only about 26%. There are many objectives of e-Learning and these objectives depend on the institutions and national needs. There are four objectives of using e-Learning at the tertiary level in Malaysia. The first is to introduce new concept of learning at a higher level of education. Secondly, it introduces interactive and productive method of learning.

The third objective is to ensure students study independently and lastly to allow for a balanced education in Malaysia. Learning model in e-Learning includes independent study, online interaction, self-evaluation and graded assignments sent online. In actual fact, today the Malaysian government is adamant about e-Learning and has devised two important strategies to support e-Learning.

Firstly, through its National Higher Education Strategic Planning launched in 2007, the Ministry of Higher Education Malaysia has identified e-Learning as one of the planning's Critical Agenda Projects (CAPs). Secondly on 7th April 2011, the Minister of Higher Education launched the National e-Learning Policy (for tertiary learning). Therefore, these two strategies are now the backbones for any e-Learning initiatives at the tertiary level of education. The practice of e-Learning in Malaysia can be categorised into two. Firstly, only UNITAR and Open University Malaysia (OUM) offer almost 90% of their courses online and with an e-Learning environment. Their courseware and others from different universities are not the same as they have different syllabus. Public institutes of higher learning for example, Universiti Malaysia Sabah, Universiti Putra Malaysia, Universiti Teknologi Mara and Universiti Sains Malaysia, use e-Learning in a mixed-mode environment (Sang and Ndubisi, 2003). To be more specific on the practice of e-Learning, there is not yet a 100% e-Learning in Malaysia. It is always a blended e-Learning; a mixed-mode e-Learning whereby a combination of e-Learning and FTF

learning are used together. Secondly, students appear not to grasp e-Learning concept yet. In a study, it was found that the respondents to the questionnaires printed the electronic materials and they are hardly ever reading on screen (Saunders and Klemming, 2003). Again, as highlighted by Asia Pacific Institute of Information Technology Managing Director Parmjit Singh (Muilenburg and Berge, 2007), students still print the lecture notes and tutorials work on from the hard copy.

This is opting the traditional method of learning. He also stressed that distinction should be made between using technology due to a need and utilising technology just for the sake of technology itself. In fact, after >2 decades of introducing e-Learning in Malaysia, it is found that students at OUM reported a moderate level of e-Learning acceptance (Yiong *et al.*, 2008). On top of that some students are still afraid to use the computers. Their concerns range from lost information to unfriendly system of e-Learning (Manochehri and Young, 2003; Thompson, 2008). In truth, students are not the only group that have problems or are afraid of using computers. The educators too have some resistance and misconceptions of teaching through computers (Razak, 1998; Juhary Jr., 2011). Therefore, educators must decide on using e-Learning concept as a tool to enhance learning or as a fashion statement to show the sophistication of technology. Moreover, they must also be prepared to use the technology accordingly. All the above discussions are the ideal for tertiary e-Learning. Many private colleges and universities in Malaysia especially practise e-Learning for it is an asset to be added in their advertisement. However, how effective and how e-Learning helps in these tertiary centres remain unclear.

RESULTS AND DISCUSSION

Basically, the findings of the study can be categorised into two issues-contents and impacts of e-Learning. The findings are summarised as:

The contents of e-Learning: The contents of e-Learning are designed according to the syllabus. However, colourful sketches and drawings can be confusing at times. Also, some texts tend to be too wordy. On the same issue, some texts are written in various colours to distinguish points. In actual fact, the colours do not help students to study well. Education relies heavily on the contents of each course. Usually, a professional accreditation body will accredit the contents. This shows that contents play a very important role in the courseware of e-Learning. Contents for e-Learning come in various

ways. Some content developers use sophisticated tools to create interactive and interesting programme. Ideally, all relevant parties such as content developers, instructional designers and curriculum planners need to look at the theories of teaching and learning before they start planning, developing and designing the contents for courseware.

There are a lot of theories involved in the teaching and learning process. The most commonly related to the development of e-Learning programmes are Behaviourism, Cognitivism and Constructivism. The most popular one will be the Behaviourism pioneered by Skinner (1974). Skinner (1974) suggested that students will learn better when they are given the Drill and Practise treatment. Basically students will be asked to repeat phrases for example and practise the phrases until they show perfection. Kulik (1994) put forth that educational technology with drill and practice exercises can be effective during the process of teaching and learning. According to him, students learn more and they learn rapidly. In fact, the first computer interface for helping the process of teaching and learning is the drill and practise exercises (Abbot, 2001).

Meanwhile, Cognitivism refers to students' ability to use their minds to study. Information is viewed as symbolic, mental constructions in the minds of individuals and learning becomes the process of committing these symbolic representations to memory where they may be processed (Varela *et al.*, 1991). The use of technology then would be a flow of information to students. This information will be useless unless they are processed to become knowledge (Lee, 2001). All these will be resolved in the students' mind. Cognitivism is related to the use of e-Learning since, students will be dealing with abundance of information daily.

Apart from that, another theory of learning emerges due to the extensive use of technology. It is suggested that since, students are pre-exposed to many things in their life through television or the Internet, they are now constructing their data and develop them into something that they understand. This is what this theory is all about Constructivism. Abbot (2001) described the paradigm shift in the teaching and learning process when using technology as the existence of constructivists teachers and students themselves. This is because students construct their knowledge based on new things surrounding them. Now, the most important question is how do content developers, instructional designers and curriculum planners relate their masterpiece to the theories involved? Notes and texts of e-Learning should not only

reflect the drill and practise exercises but also challenge students' mind. The text should be written straight to the point but at the same time not everything should be included. This is because spoon-fed concept in traditional teaching and learning must not be practised anymore.

When students are expected to self-direct their study, they must be taught to be independent. Independence does not only mean their ability to study on their self-initiative power but more so, on their critical thinking ability on their ability to filter and choose the relevant information. Furthermore, another point that needs consideration is the proficiency level of students in the courses. Since, students have different level of understanding and achievement, content developers and instructional designers must prepare courseware that can cater to these different needs.

The impacts of e-Learning: The impacts of e-Learning are 2-fold positive responses from students because they can depend on e-Learning though they are absent from classes. However, the negative impact is students seem not to know how to utilise e-Learning to the fullest. Moreover, the effectiveness of e-Learning is not tested. This is because the performance results of students who use e-Learning or otherwise have never been analysed. Based on the questionnaires and observations, it can be concluded that students are falling into a trend which is labelled by the researcher as rest and risk. This trend means that students are given almost all the relevant contents in their e-Learning courseware.

Therefore, students may not be playing active role in their studies. They are passive and just become the recipients of knowledge. Further when they have assignments to be submitted, they do not work for it. Cut and paste is the best solution. About 51% respondents agreed on this. In addition, not all colours are suitable for computer screen. A colour such as yellow tends to strain one's eyes. Wilson (1997) opined that one slide should only have not >3 different colours. This explain in theory. In practice, 83% respondents claimed that their courseware is colourful and a slide can have >5 colours. Perhaps, the content developers and instructional designers have their own reasons to attract and maintain concentration. However, striking colours will only make students' eyes easily tired. Again, all relevant parties should go back to the philosophy of education and students' needs in education.

As mentioned before, the impacts of e-Learning onto the students are divided into two; positive and negative. The positive response refers to students' feelings and

anticipation towards using e-Learning. From the observation and questionnaires, 78% of the respondents felt that anxiety to learn is almost none. This is because students learn independently and their pace of learning depends on their understanding of the contents. Despite this positive response, students still need a lot of guidance while they are engaged with e-Learning.

This is because students are less aware of the principles when they use e-Learning. Based on the questionnaires, 65% of the respondents claimed to print online materials and do the assignment on study. This is against the principle of e-Learning that inculcates learning online. In addition, students are not taught the ethics of using e-Learning. As educated citizens, students should be made aware that plagiarism, the technical term for cut and paste is an offence.

Only 21% of the respondents were aware that plagiarism is an offence and 89% respondents did not know the meaning of plagiarism. These respondents felt although plagiarism is wrong, they have to do it due to many factors. One of them is quite surprising the contents in the courseware are not self-explanatory. About 78% of the students claimed that despite long texts provided, they still cannot understand the contents as the points are loose.

Thus, the simplest solution would be to surf the Internet and copy directly from the articles found in the Internet. In this study, the researchers argues that the contents of e-Learning should also be called the input and the impacts are known as the output. This is because the contents or the information will be absorbed and used by the students. The contents function as guidelines for the students. The impacts, on the other hand will be the product or outcome of e-Learning itself. That is why, the impacts are also known as the output because at the end of the day, educators may be able to see how the new tool has shaped and reformed the students.

This concept is significant for future research in e-Learning because more often than not, the terms

contents and impacts may carry different meanings and thus, this reflects the dynamics of e-Learning pedagogy. This concept is explained better in Fig. 1.

IMPLICATIONS

The implications of this study are 3-fold. Firstly, those in charge of planning and designing courseware for e-Learning should be aware of the theories underlying the process of teaching and learning. Careful planning is a must in order to produce not only quality courseware but also courseware that follows the theories of teaching and learning. Secondly, the students should be made aware of their responsibility. They should not take advantage of the system. The system is designed to help them study efficiently. One way to educate the students is to tell them the values of the system and the importance of the contents.

Also, they must be informed that more information is always available online. Thirdly, the educators must find ways to prevent plagiarism. As students easily cut and paste from the Internet for their assignments, educators should monitor students' work and teach them how to use the system wisely. Even though, students are submitting an assignment worth 5%, plagiarism should not be practised since, it is not ethical to assume others' work and ideas as their.

CONCLUSION

It can be concluded that it is not easy to transfer theories into practices. As it happens, it is difficult to find a courseware that caters to the pedagogical structures and technological advances as there is a strong disconnect between experts in pedagogy and technologists (Blinco *et al.*, 2004). This is because as humans tend to forget rules they may not concentrate on the needs of the students. It is always wise to think of the students as the customers and thus they are always right. Students have the rights to demand for quality and relevant education.

As e-Learning is evolving rapidly, its components must be tailored based on students' aspiration. Constant monitoring is also a must to ensure contents and impacts are parallel. Lee (2001) put forth that all parties involved in education should be well-versed in cognition and learning theories to fully understand how learning occurs before they can create their own eclectic techniques from a wide range of instructional approaches and media.

Justifying this statement, Mergel (1998) suggested that educators should employ an objective approach to provide students with an anchor before they set sail on the open seas of knowledge. Thus, hopefully with this

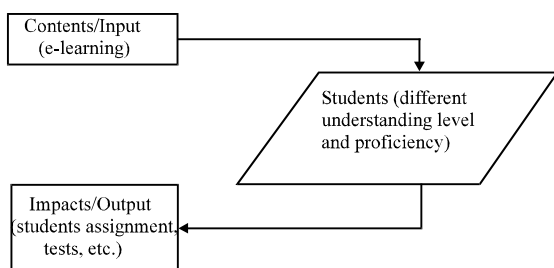


Fig. 1: The relationship between contents/input and impacts/output

caution in mind, all objectives of e-Learning will be achieved which are promoting new concept of learning, interactive and productive learning, independent learning and balanced learning for all Malaysians.

LIMITATIONS

This study has two limitations. Firstly, as the number of subjects of the study is very small perhaps, the findings and conclusion made are not enough to make a broader conclusion.

Secondly, the observations and survey are conducted at only one place. Perhaps different places that employ e-Learning have different scenarios. Because of these two limitations, future research should focus on investigating the scenario of e-Learning in many parts of Malaysia, simultaneously or over a period of time. It would be interesting to see how the data and findings vary and thus highlight different conclusions and analysis.

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